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Recent trends in disasters and their socio-economic and environmental aspects

Green growth approach: experiences in mainstreaming disaster risk reduction and climate change adaptation*

Note by the secretariat

I. Background and definition

1. The ESCAP-initiated Green Growth concept was recognized in the Ministerial Declaration on Environment and Development in Asia and the Pacific, 2005, which was adopted by the Fifth Ministerial Conference on Environment and Development in Asia and the Pacific in 2005, as one of the strategies for the region to pursue sustainable development.[1] It could be seen as a strategy to promote win-win approaches and policies for reconciling any conflict between two important Millennium Development Goals on poverty reduction (Goal 1) and environmental sustainability (Goal 7).

2. The Green Growth concept of ESCAP integrates the economic and socio-political growth within a limiting global environment capacity and its limited natural resources. Green Economy is consistent with the concept and can be defined as an economy where prosperity can go hand-in-hand with ecological sustainability. In practical terms, a green economy invests in ecological resources and services, such as a stable climate, bio-diversity and clean air and water, and sees that as an opportunity for profit, employment and economic growth rather than as a cost and burden to the economy. Green Growth is the process of greening conventional economic system and a strategy to arrive at a green economy.

* The present document has been issued without formal editing.

1 See *The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific, 2005* (United Nations publication, Sales No. E.05.II.F.31).

3. Sustainable development, which is defined in Agenda 21 as an approach ensuring "the needs of the present without compromising the ability of future generations to meet their own needs", is not unlike Green Growth. However, while sustainable development looks on reflecting environmental sustainability into economic policies, Green Economy/Green Growth focuses on a system change and aims at greening the economic system itself. Green Growth and Green Economy represent a new development paradigm in which the economic development and environmental sustainability reinforce each other and create a win-win synergy rather than trade-offs. The idea is to convert the limited global ecological carrying capacity into an opportunity for greening economic growth while ensuring ecological efficiency, such as:

- Internalizes ecological cost
- Maximizes resource efficiency
- Minimizes pollution impact

4. The quality of growth is linked to the progress in disaster reduction. The overall economic growth should contribute to sustainable development and be of kind that prevents or reduces economic and other losses from disasters. According to a report[2] by the United Nations and the World Bank, by the end of this century, annual economic losses caused by natural disasters alone could rise to $185 billion, even without factoring in the impact of climate change. The application of the Green Growth principles would improve ecological efficiency and the quality of growth, and reduce environmental degradation, social disruptions and infrastructure destruction that disasters cause.

5. The pursuing a Green Economy and Green Growth means more than just investing in ecological resources and green technologies, such as renewable energy technologies. The strategy strives to change the economic system so that investment in ecological resources and services become drivers of economic development. The current economic system needs to internalize the ecological price of the resources and services consumed into the market price so that investment in renewable energies and ecological resources can generate profits, employment and economic growth without subsidies or incentives from the government.

II. Roles of green growth application in disaster risk management and climate change adaptation and mitigation

6. The global warming from a combination of fossil fuel combustion, deforestation and food production has caused more extreme and escalated weather events and disasters, such as floods, droughts, cyclones, sandstorms, glacial melting, sea level rise, etc. The increase in the number and severity of disasters has been mostly, more than 90 per cent, on water related issues.

[2] *Natural Hazards, UnNatural Disasters – Economics of Effective Prevention*. The World Bank and United Nations, November 2010. www.gfdrr.org/gfdrr/sites/gfdrr.org/files/nhud/files/NHUD-Report_Full.pdf.

7. Natural occurrence of floods and droughts has always been present in the Asia-Pacific region by virtue of its geographical location and human settlement. When disasters occur, they will not only disrupt socio-economic activities but also cause setbacks to many socio-economic gains by destructing amenities/services and infrastructure. Disasters also create a huge opportunity cost lost in alternative use of the capital and other capacities needed for rebuilding the economy.

8. The immediate implementation of the Green Growth concept would reduce the emission of greenhouse gases (GHGs), which are the root cause of the climate change. This long-term strategy could include various eco-efficient water infrastructures and other eco-friendly non-structural measures, such as development of riparian areas and management of watersheds. In this way, Green Growth would become a necessary component in sustainable disaster risk reduction.

9. The Green Growth option looks at ecological efficiency by internalizing ecological cost, maximizing resource efficiency and minimizing the impact of pollution. The railroad based transport system and management of water bodies, rivers and lakes in Japan are examples of this. In Singapore, the integrated management of river basin and land and water resources has converted the whole island into a catchment area for its water supply, reducing its dependency on imported water. The new approach of bringing the water environment to the population has created a new more active life style while maintaining a beautiful and clean environment. The control of the number of private cars further supports Singapore's policy of ecological efficiency. Many other countries, such as the Republic of Korea and China, have also initiated green growth packages of their own.

10. The publications of IPCC and various other publications have pinpointed that global warming and climate change are caused by anthropogenic forcing, through the release of GHGs – carbon dioxide, methane, nitrous oxide and other chlorofluorocarbons to the atmosphere. GHG releases have been accelerating since the beginning of industrial revolution of the 18th century. Better medical care has resulted in increase in human population and longevity. Concurrently economic growth has resulted in changing human life style, requiring more food and energy to support the human population, which is projected to increase from around 1 billion in the 18th century to the current 7 billion and the projected 9 billion at the end of this 21st century.

III. Trends of increasing vulnerability and natural disaster risk in the context of socio-economic development

11. The Asian and Pacific region has 61 per cent of the world's population and a similar proportion of the world's absolute poor. About 470 million of the population in the Asia Pacific are without safe drinking water and 1.9 billion without sanitation facilities. In an effort to improve its economic status, its rapid growth has further resulted in polluting its environment. Yet it needs continued rapid growth. Contributing just 34 per cent of the global GHG emission, the region has the most number of vulnerable communities facing the impact of climate change which are manifested in a rising number of extreme climatic events of floods, droughts and cyclones. Such events are often followed by other calamities,

such as landslides, erosion, rapid flow of huge volume of water and forest fires, which destroy human settlements.

12. The lowlands and floodplains have always been the choice for human settlements because of their accessibility. The developing towns and cities in these areas are commonly populated by millions of poor and most vulnerable people, who often lack basic facilities of water and sanitation. These low-lying urban areas have many factories that make use of the available human resources. Also their water and solid waste is often discharged directly into the water bodies creating not only polluted pools but providing obstacles to flood flows. These factors multiply the impact of eventual disasters, whether natural or climate induced.

13. The growing population density in Asia and the Pacific, currently over 1.5 times above the world average, and rapid urbanization put further pressure on the region's ecological carrying capacity. With the converging crisis of food, energy and finance, and the long-term impact of climate change, the region needs to change its growth pattern to combat poverty, yet concurrently ensuring ecological sustainability for its sizeable communities. Under these circumstances pursuing development according to Green Economy and Green Growth principles becomes a natural option.

IV. The path of climate change and green growth

14. Because of the unpredictability of disasters and the lack of reliable projections of the occurrences, the recommendations on climate change impacts have focused on picking "low hanging fruits" such as managing the natural resources of land and water in a holistic and integrated manner. Also the need to build resilience of local communities has been emphasized, as the impact will first be felt by communities on the ground. This includes the promotion of integrated water resources management within each river basin to ensure that development is contained within its ecological carrying capacity, and incorporates the needs of ecological efficiencies, such as internalizing ecological cost, maximizing resource efficiency and minimizing pollution.

15. The Sixth Ministerial Conference on Environment and Development in Asia and the Pacific, held in Kazakhstan in September 2010, adopted the Astana "Green Bridge" Initiative to link Europe and the Asian and Pacific region through Green Growth.[3] The ESCAP secretariat has been supporting member States in putting the Regional Implementation Plan for Green Growth into action and is now undertaking a project to further enhance capacity on the application of the green growth approach, based on the concept of economic system change and "ecological efficiency." It is expected that this project and other related activities of ESCAP would enhance the resilience of communities and countries in the region to natural disasters and possible impact of climate change.

16. The impact of climate change needs to be taken into account when assessing the sustainability of ongoing and new development efforts. The prevailing practices of over-exploitation of natural resources, including by discharging human solid waste and waste water into the natural water

[3] See E/ESCAP/67/8.

bodies, have rapidly aggravated the deterioration of the environment and affected the sustainability of development.

17. Green Growth low-carbon approach is expected to provide a synergy of efforts through co-benefit approaches, with the migration from the current market-based economy to an ecological based green economy. Within the ecological-based green economy, each economic decision should be made with considerations of its impact on the environment.

18. Slowing down of the global warming requires good practices and new technologies and new development initiatives that reduce the GHGs emissions and take into account the limited nature of available natural resources. The mitigation of global warming and adaptation to the climate change include review of policies, planning and implementation processes and strategies of national development initiatives/plans, the use of such generic processes as IWRM and Green Growth. The future projects of ESCAP are expected to provide various examples and good practices highlighting the feasibility of the Green Growth approach in improving the resilience of communities and nations to natural disasters and climate change.

19. Green Growth needs to be seen as a process that can support both the adaptation and mitigation to climate change. This is especially so as Green Growth is looking at continued development while maintaining environmental sustainability. Since Green Economy and Green Growth imply a change in the economic system, they are relevant for all countries. For many developing countries, they may be even more relevant than for some developed countries, as their economies are more vulnerable to external shocks such as food-fuel crisis or disasters caused by the climate change. This is especially true for small island developing States, least developed countries and oil importing countries, whose economies often rely on a very few sectors and depend on exports of natural resources and commodities.

20. Green Economy/Green Growth can be a leapfrogging strategy for developing countries to pursue economic development without repeating the conventional “grow first, clean up later” path. Adopting Green Growth should focus on the quality of growth and emphasis on increasing ecological efficiency with supplementary initiatives on enhancing economic and social development. It may be even easier for developing countries, as their economies are still at an earlier stage of development and do not have